Quality Audits: 1. Green Audit, 2. Environmental Audit, 3. Clean and Green Campus, and 4. Beyond the Campus Environmental Promotional Activities

2021-2022

Maharaja Ganga Singh University

A State University of Higher Education for Dignity and Self-Reliance

Approved by UGC under Section 12B of the UGC Act 1956

NH 15, Jaisalmer Road, Bikaner-334004 (Rajasthan), India

https://mgsubikaner.ac.in

Green Audit Report

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity of various establishments. It aims to analyze environmental practices within and outside of the concerned sites, which will have an impact on the eco-friendly ambience. Green audit can be a useful tool for university to determine how and where they are using the most energy or water or resources; the university can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus. If self enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self enquiry is a natural and necessary outgrowth of a quality educational institution. Thus it is imperative that the university evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background it becomes essential to adopt the system of the Green Campus for the institutes which will lead for sustainable development and at the same time reduce a sizable amount of atmospheric carbon-di-oxide from the environment. The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures. OBJECTIVES: In recent time, the Green Audit of an institution has been becoming a paramount important for self assessment of the institution which reflects the role of the institution in mitigating the present environmental problems. The university has been putting efforts to keep our environment clean since its inception. But the auditing of this non-scholastic effort of the university has not been documented. Therefore, the purpose of the present green audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Audit are:

1. To map the Geographical Location of the university
2. To document the floral and faunal diversity of the university.
3. To record the meteorological parameter of Bikaner where university is situated.
4. To estimate the Energy requirements of the university Green Audit Report, IQAC, Maharaja Ganga Singh University, Bikaner.
5. To document the Waste disposal system

6. To document the ambient environmental condition of air, water and noise of the university
7. To introduce and aware students to real concerns of environment and its sustainability

Methodology:

The purpose of the green audit of Maharaja Ganga Singh University is to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institution. The methodology include: preparation and filling up of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. Some data have also been taken from the students' research works carried out by the environmental science department of the university.

Green auditing:

The university has adopted the 'Green Campus' system for environmental conservation and sustainability. There are main three pillars i.e. zero environmental foot print, positive impact on occupant health and performance and 100% graduates demonstrating environmental literacy. The goal is to reduce CO2 emission, energy and water use, while creating atmosphere where students can learn and be healthy. For audit purpose and suitability of analysis of data the study area i.e. campus is divided into eight sections and detailed description of areas included shown in following table:

S. No.	Section	Units
1	Vice Chancellor Secretariat	Ground Floor : Vice Chancellor Cabin, PS/PA Office, Pantry, Proctorial board office, IQAC office, Meeting hall for Board of Management/ Academic council and Board of Studies, Building Store Room, Gent' s and Ladies toilets for Staff, Water Cooler.
2	Administrative block	Registrar office, Comptroller of Finance office, Director research office, Central store/GAD and Establishment section, Academic section and accounts office, Pantry, Gent' s and Ladies toilets for Staff, Water Cooler.
3	Examination Block	Office to COE, Secrecy, Enrollment, Student help desk, Underground warehouse for examination related material, Gent' s and Ladies toilets for Staff, Water Cooler.
4	University Guest House	Guest house manager office, Waiting lounge, Mess and Kitchen, dormitory, ten furnished rooms, three store rooms, Gent' s and Ladies toilets for Staff, Water Cooler.
5	Canteen	Pantry, refreshment zone and sitting area, Gent' s and Ladies toilets for Staff, Water Cooler.
6	Academic Block-1	Department of Environmental Science, Microbiology and

		Computer Science, Central Laboratory, six laboratories (two for each department), server room, classrooms, auditorium, Museum, faculty chambers, Gent' s and Ladies toilets for Staff, Water Cooler.
7	Academic block-2	Department of English, History and School of Law, classrooms, auditorium, Examination control room, faculty chambers, Gent' s and Ladies toilets for Staff, Water Cooler.
8	Central Library	Office to librarian, Reference section, Faculty reading room, Computer room, Reprographic section, Circulation section, Research section, Thesis depository section, Gent' s and Ladies toilets for Staff, Water Cooler.

Solid Waste and Management:

This indicator of auditing is deals with, waste production and its disposal: paper waste, food waste, plastic waste, biodegradable waste, construction waste, glass waste, dust etc and recycling. Solid waste generation and management is a burning issue. Unscientific handling of solid waste can create threats. The solid waste audit focused on volume, type of solid waste generated in university campus. The solid waste collected was paper waste, plastic waste, biodegradable waste, construction waste, glass waste and other waste. The total solid waste collected in the campus is 150 tonnes/Year. Paper waste is a major, also single sided used papers reused for writing and printing in office and in other departments. Important and confidential reports/ papers are stored in office store, can't send for recycling after completion of their preservation period. Very less plastic waste is generated in university campus but it is neither categorized at point source nor sent for recycling. Metal waste and wooden waste is neither segregated not given to authorized Scrap agents. Few glass bottles are reused in the laboratories and small glass waste is thrown on site. Small paper piece waste, classroom waste, biodegradable waste is used for composting but some biodegradable, office and classroom waste burn on site near academic block-1 building. Food waste, dinning waste etc. of common canteen is thrown on site.

Hazardous waste audit:

A. Chemical waste

This is hazardous waste of laboratories, medical waste from health center, colors, dies and chemicals used in campus maintenance. Hazardous materials represent significant risks to human health and ecological integrity. Only in the department of Environmental science, Micro-biology the laboratories generate the chemical waste. Survey and data collection shows that chemical waste generated on the campus through Science laboratories is very less and majorly generated by the department of environmental science and micro-biology. At time of site inspection it is observed that in the

department of environmental and microbiology hazardous chemicals are handled for practical purpose and these hazardous chemical wastes are drain out with basin water directly to the campus. In some extent it produces an air, soil, water pollution. Hence drainage of chemical laboratory should be collected in air tight cement chamber and frequently the chemical waste from chamber is sent for recycle or for scientifically destroy process. The study data reveals that solid hazardous waste 05 Kg and liquid hazardous waste 20 liters are generated, it drained with making 100 times dilution. Usually there is a practice in the laboratories to store these hazardous chemicals in the containers and cans for safe disposal. The stoppers of all the bottles are regularly checked. The exhaust fans are not provided in some laboratory to expel gaseous waste. No separate dust bins for wet solid waste or for chemical precipitation are seen in laboratory.

B. E-waste

E-waste can be described as electronic equipment that is near or at the end of its useful life. E-waste is much more hazardous than other waste because electronic components contain cadmium, lead, mercury, and Polychlorinated biphenyls (PCBs) that can damage human health and the environment. E-waste generated in university campus is of schedule III and is generated is very less but not disposed in scientific way. Now institute has some e-waste like chips, bulbs, circuit boards, mother boards, computers, batteries, and switches. The university is not using paperless office work administration due to which in campus there is carbon emission due to printers, filing of cartridge inside the office and in several section Xeroxing and printing facility is observed. The non-working computer spare and other non-working electrical equipments like bulbs, tubes, PCB components, pieces of wires, computer hardwaŕe s, and old instrument‟ s are dumped in different sections at several places. Buy back policy is not available. University does conduct the awareness programmes regarding -E-waste Management with the help of Department of environmental science for how to handle and dispose the E-Waste. There is no separate method to dispose the e waste through authorized vendors.

Environmental Management Plan: Environmental Management Plan gives the strength, weaknesses and suggestions on the environmental issues of Maharaja Ganga Singh University Bikaner campus. It also suggests about which area is to be given priority. The green audit of Maharaja Ganga Singh University campus reveals that the administration should take care of solid waste, waste water, chemical waste and e-waste management on high priority as the ignorance to these will deteriorate the environment on the campus. The entire exercise of green audit concluded that the university administration is keen on all the environmental issues and starts steps for environmental sustainability. Students, staff, faculty and administration working together will produce the best results in raising awareness and help for environmental friendly campus.

Environmental Audit

Environmental audit is a useful tool for a university to implement the sustainable practices and wise use of its energy or water resources. It helps the decision makers to adapt adequate changes in the campus to enhance the savings of these resources. It promotes the recycling of the degradable wastes and helps to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values and ethics. The Environmental Audit of an institution is becoming a paramount important these days for self-assessment of the institution, which reflects the role of the institution in mitigating the present environmental problems. The university has been putting efforts to keep the environment clean since its inception. But the auditing of this non-scholastic effort of the campus has not been documented. Therefore, the purpose of the present environmental audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards. The main aim objectives of the environmental audit are to assess the environmental quality and the management strategies being implemented in the MGS university campus.

The specific objectives of Environmental Audit are:

i. To assess the source and quantity and of the water in the MGS university campus
ii. To know and monitor the energy consumption pattern in the campus
iii. To quantify the liquid and solid waste generation and management plans in the campus.
iv. To assess the carbon foot print of the Campus
v. To impart environment management plans to the campus

Benefits of Environmental Audit to the university: There are many advantages of environmental audit to an Educational Institute:

i. It would help to protect the environment in and around the campus.
ii. Recognize the cost saving methods through waste minimization and energy conservation.
iii. Find out the prevailing and forthcoming complications.
iv. Empower the organization to frame a better environmental performance.
v. It portrays good image of institution through its clean and green campus

vi. To undertake extra moral studies, extension programs and field outreach activities to contribute to the development of Society.

Methodology adopted for Environmental Audit:

The audit process was carried out in two phases. At first, all the secondary data required for the study was collected from various sources, like concerned departments, administrative block, VC Secretariat, Examination block, guest house, canteen etc. Different case studies and methodologies were studied and the following methodology was adopted for present audit. The methodology of present study is based on onsite visits, the personal observations and questionnaires survey tool. Initially, based on data requirement, sets of questionnaires were prepared. The surveyors then visited all the departments of the university and the questionnaires were filled. The generated data is subsequently gathered and used for further analysis. From the outcome of the overall study, a final report is prepared.

Survey by Questionnaire:

Baseline data for green audit report preparation was collected by questionnaire survey method. Questionnaires prepared to conduct the environmental audit in the university campus is based on the guidelines, rules, acts and formats prepared by Ministry of Environment, Forest and Climate Change, New Delhi, Central Pollution Control Board and other statutory organizations. Most of the guidelines and formats are based on broad aspects and some of the

issues or formats were not applicable for University campus. Therefore, using these guidelines and formats, combinations, modifications and restructuring was done and sets of questionnaires were prepared as solid waste, energy, water, hazardous waste, and e-waste. All the questionnaires comprise of group of modules. The first module is related to the general information of the concerned department, which broadly includes name of the department, month and year, total number of students and employees, visitors of the department, average working days and office timings etc. The next module is related to the present consumption of resources like water, energy, or the handling of solid and hazardous waste. Maintaining records of the handling of solid and hazardous waste is much important in environmental audit. There are possibilities of loss of resources like water, energy due to improper maintenances and assessment of this kind of probability is necessary in the environmental audit. One separate module is based on the questions related to this aspect. Another module is related to maintaining records, like records of disposal of solid waste, records of solid waste recovery etc. For better convenience of the surveyor, some statistics like, basic energy consumption characteristics for electrical equipment etc. was provided with the questionnaires itself.

Onsite visit and observations:

The MGS University has vast built-up area comprising of various departments, administrative building, Estate office, Central library, guest house and sports complex. All these amenities have different kind of infrastructure as per their requirement. All these buildings were visited by the surveyors and the present condition is checked with the help of the questionnaires. Interviews were conducted with the staff members, faculties and students. Personal observations were made during the onsite visit. All the amenities were clubbed in as per their similarities and differences, which makes the survey and further analysis easier.

Data analysis and final report preparation:

A proper analysis and presentation of data produced from work is a vital element. In case of environmental audit, the filled questionnaires of the survey from each group, were tabulated as per their modules, in Excel spreadsheets. The tabulated data is then used for further analysis. For better understanding of the results and to avoid complications, averages and percentages of the tables were calculated. Graphical representation of these results was made to give a quick idea of the status. Interpretation of the overall outcomes was made which

incorporates all the primary and secondary data, references and interrelations within. Final report preparation was done using this interpretation.

Table-1: List of Students and Staff Involved in Environmental Auditing

S.No.	Name of auditor	Designation
1	Prof. Anil Kumar Chhangani	Head, Department of Environmental Science
2	Prof.RajaramChoyal	Director, Thar Desert Research Centre
3	Dr. Anil Kumar Dular	Asst. Prof., Department of Env. Science
4	Dr. P.D. Charan	Asst. Prof., Department of Env. Science
5	Dr. Leela Kaur	Asst. Prof., Department of Env. Science
6	Mr. Diksha	Student, M.Sc. Sem. III, Dept. of Environmental Sc.
7	Ms. Nazia	Student, M.Sc. Sem. III, Dept. of Environmental Sc.
8	Ms. Prerana	Student, M.Sc. Sem. I, Dept. of Environmental Sc.
9	Mr. Rahul Sharma	Student, PG Diploma in Geoinformatics and Remote Sensing, Dept. of Environmental Science.
10	Ms. Sweta	Student, M.Sc. Sem. III, Dept. of Environmental Sc.

Energy Audit

This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliances and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment.The survey carried out by the auditors and electricity bills of the campus showed that the campus consumed electricity on an average 31557 units per month during May, 2021 to April, 2022 (Photo 7.5). But due to installation of 500 KW solar plant in the campus, the campus has curtail the significant amount of the electricity bill. The use of LED bulbs and solar powered road lights are also helped the campus to reduce its carbon footprints and exert the positive impact on the environment.

Water Audit

The university campus is located in core area of Thar Desert, where water scarcity is a common feature. Water audit can be defined as a qualitative and quantitative analysis of water consumption to identify means of reducing, reusing and recycling of water. Water Audit is nothing but an effective measure for minimizing losses, optimizing various uses. A

water audit is a technique or method which makes possible to identify ways of conserving water by determining any inefficiencies in the system of water distribution. The measurement of water losses due to different uses in the system or any utility is essential to implement water conservation measures in such an establishment. This indicator addresses water consumption, water sources, appliances and fixtures. It is therefore essential that any environmentally responsible institution should examine its water use practices.

It is observed that a number of factors like dry climate, culture, work and working conditions in this part of the western Rajasthan, the optimum use of water is became the habit of the residents of the region. As per the standards provided by WHO Regional office for South East Asia, the need of 10-15 litres water per student if water-flushed toilets, while administration requires (Staff accommodation not included) about 50 litres per person per day, Staff accommodation requires 30 litres per person per day and for sanitation purposes it depends on technology.

The ground water of the campus is not fit for drinking as well as irrigation purpose for plantation.The total water requirement for the University is about 200 KLD. Out of which, about 50-60 KLD water is used to irrigate the plants developed at the campus near roadsides and in different parks of the campus. Water quality of resources in the area has been studied for assessing the water environment.The campus is having rain water storage facility. It has about 8 lakh litre's storage capacity ground water tanks near all major building.These efforts by the campus show the commitment of the university to conserve the resources and make the campus as eco-friendly institution.

Ambient air quality monitoring:

The ambient air quality monitoring is regular practice of the students of the department of environmental science. It has been reported that the air quality of the campus is well below the maximum permissible limits of various air pollutants as per national ambient air quality standards (Charan and sahal, 2014; Saran and Charan, 2021).The greenery in the campus is the result of massive plantation programmesinitiated by the university at regular intervals, especially before the arrival of the monsoon season every year. (Photo 7.1 to 7.2).

Biodiversity Audit

Biodiversity richness is very important for healthy ecosystem as well as the survival of the human being. It regulates the climate, keeps the waterandairclean, and provides food,shelter, clothing, medicine and other useful products. Theplant acts as the lungs of

the earth as they keeps the air cleans.The plants are also playing vital role in stabilizing the sand dunes, which is the common feature of the desert area.

The soil of the thar is very poor in nutrition profile which may be boosted by the presence of plants, as they impart the organic matter in the soil. The low and erratic precipitation, high temperature, low humidity and hostile climatic conditions are common in the region. Due to such conditions, the floras as well as fauna have many adaptations to sustain in the region. A complete list of the flora and fauna of the region is prepared by the department of Environmental science.

Table-2: Tree flora of the MGS University Campus

S.No.	Common Name	Botanical Name
1	Bakayan Tree	*Melia azedarach*
2	Babul	*Vachelliatortilis*
3	Deshi Babul	*Vachellianilotica*
4	Saptparni	*Alstoniascholaris*
5	Neem	*Azardirachtaindica*
6	Rohida	*Tecomellaundulata*
7	Shisham/Tali	*Dalbergiasisso*
8	Gulmohar	*Delonixregia*
9	Subabul	*Leucaenaleucocephala*
10	Seemia / Kassod	*Senna siamea*
11	Senjna/Sahjan	*Moringaoleifera*
12	Khejri	*Prosopis cineraria*
13	Karanj	*Pongamiapinnata*
14	Gundi	*Cordia sinensis*
15	Mopen	*Colophospermum mopane*

Table-3: Common shrubs of the MGS University Campus

S.No.	Common Name	Botanical Name
1	Babul	*Vachelliatortilis*
2	Aak	*Calotropisprocera*
3	Ker	*Capparis decidua*

4	Jhadberi	*Zizyphusnummularia*
5	Dhatura	*Datura stramonium*
6	Vilayati babul	*Prosopisjulifera*
7	Ashwagandha	*Withaniasomnifera*

Tabl-4: Common Herbs and grasses of the MGS University Campus

S.No.	**Common Name**	**Botanical Name**
1	Aghara	*Achyranthesaspera*
2	Adusa/Vasaka	*Adhatodavasica*
3	JangaliPudina	*Ageratum conyzoides*
4	Matsyaakshi	*Alternantherapungens*
5	JangaliChaulai	*Amaranthusviridis*
6	Needle Grass/ Lampdo	*Aristidafuniculata*
7	Chirchitta	*Bidensbiternata*
8	Utangan/ DudhiyaChoti	*Blepharisrepens*
9	Punarnava/ Santhi	*Boerhaviadiffusa*
10	Vasuka/Madanghanti	*Borreriahispida*
11	Makra, Murat	*Bracheriaramosa*
12	Bharut	*Cenchrusbiflorus*
13	Anjan / Dhaman	*Cenchrusciliaris*
14	Bathua	*Chenopodium album*
15	Jargi	*Chloris barbata*
16	Bagra / Peelihulhul	*Cleome viscosa*
17	Shankhpushpi	*Convolvulus microphyllus*
18	Bahuphali/Cham Ghas	*Corchorusdepressus*
19	Kurighas	*Dactylocteniumaegypticum*
20	Tantia, ganthio	*Dactylocteniumsindicum*
21	Navananji	*Dicomatomentosa*
22	Asian crabgrass	*Digitariabicornis*
23	Unthkanto	*Echinopsechinatus*
24	Bharbhusi	*Eragrostisgangetica*
25	Eraghas	*Eragrostis minor*

S.No.	**Common Name**	**Botanical Name**
26	Visnukrantha/Shyamkrantha	*Evolvulusalsinoides*
27	Dhamasa	*Fagoniacretica*
28	HiranChaaba	*Farsetiahamiltonii*
29	Bekariya/ Bekar	*Indigoferacordifolia*
30	Bhangra / Bhurbhura	*Indigoferalinifolia*
31	Leel / Lalahai	*Indigoferalinnaei*
32	Kirayat, Kalpanath	*Justicia simplex*
33	Badaward / Sakaj	*Oligochaetaramosa*
34	Gobraghas / Kutki	*Panicumantidotale*
35	Soneloghas/ DholaLijrughas	*Pulicariacrispa*
36	Nagadaminee / Undhobhurat/ Chirchitta	*Pupalialappacea*
37	ChotiKateri, Ringni	*Solanum surattense*
38	Sarpankha	*Tephrosiapurpurea*
39	ChhotaGokharu, Kanti	*Tribulusterrestris*
40	Ashwagandha	*Withaniasominifera*
41	Chhotadhatura	*Xanthium strumarium*
42	Bui	*Aervalanata*
43	Kheemp	*Leptadeniapyrotechnica*
44	Chag/sania	*Crotalaria burhia*

Table-5: Common Bird Speciesof the MGS University Campus

S. No.	**Scientific Name**	**Common Name**	**Status According to WPA,1972**
1	Common Babbler *	*Turdoidescaudata*	Sch. IV
2	Jungle Babbler *	*Turdoidesstriatus*	Sch. IV
3	Blue-tailed green bee-eater*	*Meropsphilippinus*	Sch. IV
4	Small Green Bee-eater	*Meropsorientalis*	Sch. IV
5	Red-Vented Bulbul*	*Pycnonotuscafer*	Sch. IV
6	House Crow *	*Corvussplendens*	Sch. V
7	Cattle Egret	*Bubulcus ibis*	Sch. IV
8	Egret little	*Egrettagarzetta*	Sch. IV

S. No.	Scientific Name	Common Name	Status According to WPA,1972
9	Indian Pond Heron	*Ardeagrayii*	Sch. IV
10	Hoopoe*	*Upupaepops*	Sch. IV
11	Black Ibis	*Pseudibispapillosa*	Sch. IV
12	White Ibis	*Threskiprnismelanocephalus*	Sch. IV
13	Common Iora	*Aegithinatiphia*	Sch. IV
14	Asian Koel*	*Eudynamysscolopacea*	Sch. IV
15	Red-wattled Lapwing*	*Vanellusindicus*	Sch. IV
16	Yellow-wattled Lapwing*	*Vaneliusmalabaricus*	Sch. IV
17	Common Myna*	*Acridotherestristis*	Sch. IV
18	Rose-ringed Parakeet	*Psittaculakrameri*	Sch. IV
19	Grey francolin / Partridge*	*Francolinuspondicerianus*	Sch. IV
20	Blue rock Pigeon	*Columba livia*	Sch. IV
21	Common Quail or Grey*	*Coturnixcoturnix*	Sch. IV
22	Indian Robin*	*Saxicoloidesfulicata*	Sch. IV
23	House Sparrow*	*Passer domesticus*	Sch. IV
24	Eurasian Collared-Dove*	*Streptopeliadecaocto*	Sch. IV
25	White-throated Kingfisher	*Halcyon smyrnensis*	Sch. IV
26	Black Drongo*	*Dicrurusmacrocercus*	Sch. IV
27	Common Kingfisher*	*Alcedoatthis*	Sch. IV
28	Common Indian Nightjar	*Caprimulgusasiaticus*	Sch. IV
29	Indian Darter	*Oriental darter*	Sch. IV
30	Common Coot	*Fulicaatra*	Sch. IV
31	Indian Bush Lark	*Mirafraerythroptera*	Sch. IV
32	Peafowl*	*PavoCristatus*	Sch.I
33	Common Kestrel	*Falco tinnunculus*	Sch. IV
34	Sandpiper*	*Tringaglareola*	Sch.IV
35	Spotted owlet	*Athene brama*	Sch.IV
36	Indian Roller*	*Coraciasbenghalensis*	Sch.IV

Table-6: Common Mammals, Amphibian &Reptiles Species

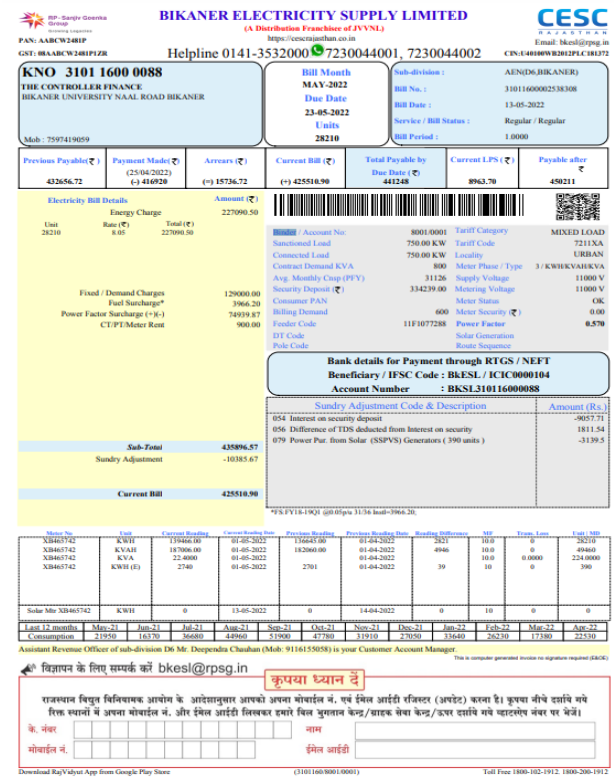
S. N.	Common Name	Scientific Name	Status as per IWPA,1972
Mammals			
1	House rat*	*Rattusrattus*	Sch. V
2	Jungle cat*	*Felischaus*	Sch. II
3	Indian Hare*	*Lepus nigricollis*	Sch. IV
4	Northern Palm squirrel*	*Funambuluspennanti*	Sch. IV
5	Blue bull/ Nilgai*	*Boselaphustragocamelus*	Sch. III
6	Indian Fox*	*Vulpesbengalensis*	Sch. II
7	Indian porcupine	*Hystrixindica*	Sch. IV
8	Indian hedgehog*	*Paraechinusmicropus*	Sch. IV
9	Indian gerbil*	*Tateraindica*	Sch. IV
Amphibians			
1	Freshwater frog*	*Hoplobatrachuscrassus*	Sch. IV
Reptiles			
1	Common indian krait*	*Bungaruscaeruleus*	Sch. II
2	House Lizard*	*Hemidactylusflavivrdis*	Sch. IV
3	Common garden lizard*	*Calotes versicolor*	Sch. IV
4	Indian Cobra*	*Najanaja*	Sch. II
5	Rat snake	*Ptyas mucosa*	Sch. IV

*** Encountered during the field survey**

Photo 7.1: Plantation near Sanvidhan Park in the campus

Photo 7.2: Comparisons before and after plantation in front of Examination block

Photo-7.4: Tradition rain water harvesting system established in the campus



BIKANER ELECTRICITY SUPPLY LIMITED
(A Distribution Franchisee of JVVNL)
https://cescrajasthan.co.in
Helpline 0141-3532000 7230044001, 7230044002
Email: bkesl@rpsg.in
CIN:U40100RJ2012PLC181372

PAN: AABCW2481P
GST: 08AABCW2481P1ZR

CESC RAJASTHAN

KNO 3101 1600 0088
THE CONTROLLER FINANCE
BIKANER UNIVERSITY NAAL ROAD BIKANER
Mob : 7597419059

Bill Month: MAY-2022
Due Date: 23-05-2022
Units: 28210

Sub-division : AEN(D6,BIKANER)
Bill No. : 310116000025383O8
Bill Date : 13-05-2022
Service / Bill Status : Regular / Regular
Bill Period : 1.0000

Previous Payable(₹)	Payment Made(₹) (25/04/2022)	Arrears (₹)	Current Bill (₹)	Total Payable by Due Date (₹)	Current LPS (₹)	Payable after ₹
432656.72	(-) 416920	(=) 15736.72	(+) 425510.90	441248	8963.70	450211

Electricity Bill Details	Amount (₹)
Energy Charge (Unit 28210, Rate (₹) 8.05, Total (₹) 227090.50)	227090.50
Fixed / Demand Charges	129000.00
Fuel Surcharge*	3966.20
Power Factor Surcharge (+)/(-)	74939.87
CT/PT/Meter Rent	900.00
Sub-Total	435896.57
Sundry Adjustment	-10385.67
Current Bill	425510.90

Meter / Account No:	8001/0001	Tariff Category	MIXED LOAD
Sanctioned Load	750.00 KW	Tariff Code	7211XA
Connected Load	750.00 KW	Locality	URBAN
Contract Demand KVA	800	Meter Phase / Type	3 / KWH/KVAH/KVA
Avg. Monthly Cnsp (PFY)	31126	Supply Voltage	11000 V
Security Deposit (₹)	334239.00	Metering Voltage	11000 V
Consumer PAN		Meter Status	OK
Billing Demand	600	Meter Security (₹)	0.00
Feeder Code	11F1077288	Power Factor	0.570
DT Code		Solar Generation	
Pole Code		Route Sequence	

Bank details for Payment through RTGS / NEFT
Beneficiary / IFSC Code : BkESL / ICIC0000104
Account Number : BKSL310116000088

Sundry Adjustment Code & Description	Amount (Rs.)
054 Interest on security deposit	-9057.71
056 Difference of TDS deducted from Interest on security	1811.54
079 Power Pur. from Solar (SSPVS) Generators (390 units)	-3139.5

*FS FY18-19Q1 @0.05p/u 31/36 Instl=3966.20;

Meter No.	Unit	Current Reading	Current Reading Date	Previous Reading	Previous Reading Date	Reading Difference	MF	Trans. Loss	Unit / MD
XB465742	KWH	139466.00	01-05-2022	136645.00	01-04-2022	2821	10.0	0	28210
XB465742	KVAH	187006.00	01-05-2022	182060.00	01-04-2022	4946	10.0	0	49460
XB465742	KVA	22.4000	01-05-2022		01-04-2022		10.0	0.0000	224.0000
XB465742	KWH (E)	2740	01-05-2022	2701	01-04-2022	39	10	0	390
Solar Mtr XB465742	KWH	0	13-05-2022	0	14-04-2022	0	10	0	0

Last 12 months	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22
Consumption	21950	16370	36680	44960	51900	47780	31910	27050	33640	26230	17380	22530

Assistant Revenue Officer of sub-division D6 Mr. Deependra Chauhan (Mob: 9116155058) is your Customer Account Manager.

This is computer generated invoice no signature required (SAOE)

विज्ञापन के लिए सम्पर्क करें bkesl@rpsg.in

कृपया ध्यान दें

राजस्थान विद्युत विनियामक आयोग के आदेशानुसार आपको अपना मोबाईल नं. एवं ईमेल आईडी रजिस्टर (अपडेट) करना है। कृपया नीचे दर्शाये गये रिक्त स्थानों में अपना मोबाईल नं. और ईमेल आईडी लिखकर हमारे बिल भुगतान केन्द्र/ग्राहक सेवा केन्द्र/ऊपर दर्शाये गये व्हाटसऐप नंबर पर भेजें।

के. नंबर
मोबाईल नं.
नाम
ईमेल आईडी

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Photo7.5: A copy of the electricity bill of the university

Solar panel in the campus on footpaths helps in electricity generation as well as provide shadow to users

Photo 7.6: Solar power plant of 500KW capacity installed in the campus for generating clean energy for the campus and also providing space for vehicle parking

(Prof. A.K. Chhangani) **(Dr. P.D. Charan)**